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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,320	09/30/2003	Henrik T. Jensen	BP3038	6526

7590 07/12/2004
James A. Harrison
P.O. Box 670007
Dallas, TX 75367

EXAMINER

NGUYEN, JOHN B

ART UNIT PAPER NUMBER

2819

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/676,320

Applicant(s)

JENSEN, HENRIK T.

Examin r

John B Nguyen

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8 and 13-28 is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Jensen et al. (US Patent No. 6,639,530 B2).

The applied reference has a common ASSIGNEE with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome

either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

4. Regarding to claim 9, Fig.2 Jensen et al. disclose an analog-to-digital converter (ADC) for producing coarse digital data based on the analog signals (column 1, line 14-15), wherein the ADC comprises: an integrator (integrators 12) coupled to receive the analog signals (analog input 20) to produce an integrated output (integrated signal 22); a quantizer (quantizer 14) coupled to receive the integrated output and for producing a digital value (quantizes signal 24) coarsely reflecting an amplitude of the integrated output based upon reference levels produced by a reference generator ($V_{ref1,2}$), the quantizer further comprising a comparator module (46,48) for comparing the reference levels ($V_{ref1,2}$) to the integrated output (integrated signal 22) and for producing the digital value (quantized signal 24); a digital-to-analog converter (digital-to-analog feedback section 18) to convert the digital value (spectrally adjusted quantized signal 26) to an analog feedback signal (analog feedback signal 28) produced to the integrator; logic for generating a shaped pseudo-random sequence (logic circuitry 54); current injection circuitry (76, 78) for sinking and sourcing current from and to the feedback signal based upon a logic value of a bit of the shaped pseudo-random sequence (spectral shaping module 16).
5. Regarding to claim 10, wherein the logic further includes a pseudo-random bit stream generator (pseudo random binary number generator 50).
6. Regarding to claim 11, wherein the pseudo-random bit stream generator includes

a linear feedback shift register (fig.3).

7. Regarding to claim 12, wherein the logic further includes shaping logic (dynamic element matching module 52) for producing shaped pseudo-random sequence (spectral shaping module 16) based upon an output of the pseudo-random bit stream generator (pseudo random binary number generator 50).

ALLOWABLE SUBJECT MATTERS

8. Claim 1-8, 13-28 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art fails to teach or fairly suggest a quantizer comprising a fluctuating reference level generator for generating the randomly fluctuating reference levels to the comparator module (claim 1); a pseudo-random sequence bit generator for producing random control signals to the voltage reference selection circuitry wherein the voltage reference selection circuitry selects the second number of voltage levels based on the random control signals (claim 7); selecting and adding a dither signal based on a pseudo-random generator bit stream value to one of the integrated analog signal and the feedback signal (claim 13); a quantizer for producing a digital output having a digital value coarsely reflecting an amplitude of the analog signals based upon randomly fluctuating reference levels, wherein the reference levels fluctuate based on a received pseudo-random sequence bit stream (claim 20); means for comparing the subset of fluctuating reference levels to an analog input signal (claim 23); and means for adding the shaped noise current source to an output of the means for converting the digital signal to analog (claim 26).

Therefore, claims 1-8, 13-28 are allowed.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See enclosed Form PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Nguyen whose telephone number (571) 272-1808. The examiner can normally be reached on 8AM-4: 30 PM M-F.



John B. Nguyen
July 06, 2004